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ABSTRACT

The problems of developing a low cost, quality institutional research program capable of longitudinal research, continuous broad bandwidth monitoring and data comparisons with other institutions, led to the development of the Hampshire Cycles Survey as an initial set of student quality of life indicators. Cycles is a multidimensional survey instrument with behavioral and nonbehavioral questions. Test-retest reliabilities range from .50 to 1.00. Cycles has been used to investigate short-term changes in key monitoring variables over the course of a term and to measure annual changes in quality of life for all students and for specific subgroupings such as freshmen or women. In addition to establishing data baselines, Cycles can be used to link norm-referenced and criterion-based evaluations. (Author/BW)

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Using Quality of Student Life Indicators at Three Cooperating Colleges — The Cycles Survey

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The institutional researcher in higher education has lacked a good set of indicators for monitoring the quality of student life. Some psychological handbooks of research instruments now exist and some commercial tests have gained currency; yet these can be especially ill-suited for innovative and experimental colleges, programs and goals, or for low-budget institutional research at any kind of school (Bonjean, Hill, and McLemore, 1967; Buros, 1965; Miller, 1964; Robinson and Shaver, 1969; Shaw and Wright, 1967).

In confronting the problems of developing a low cost, quality institutional research program capable of longitudinal research, continuous, broad, bandwidth monitoring and data comparisons with other institutions, an initial set of quality of life indicators has been developed - the Cycles Survey.

The Cycles surveys have been developing over three years and have been used at Hampshire College for twelve surveys over a five-semester period. Cycles have been used to investigate short-term changes in key monitoring variables over the course of a term, and to measure annual changes at the college for the population as a whole as well as for specific subgroups.

Background

The Cycles Survey (copy attached) is composed of approximately fifty items measuring behavioral and non-behavioral variables. During the development of both the items and the survey instrument itself several response modes were considered. Uniform response categories

were selected to provide comparability across questions and surveys, to save space and response time, and to reduce potential for respondent confusion. These scales are the four-point Satisfaction scale and the five-point Extent scale. (Taylor and Bowers, 1972)

The Cycles Survey is purposely a multi-dimensional instrument. The items, which span a broad variety of characteristics are straightforward and have high face validity. Attempts to establish a reliability index for Cycles were more complicated than would otherwise have been necessary. A simple split-half reliability could not be used. Cycles is purposely composed of single-item indicators for key variables. This is for ease of administration and response and comparability of results with similar instruments. Consequently, the many available, but much longer, reliable scales often used to measure the variables found in Cycles were not appropriate (cf., Robinson and Shaver, 1969). Cycles Surveys focus on students' experience during an explicit time period — initially two weeks. This explicit temporal focus made a modification of a Test-Retest reliability analysis necessary.

For the retest reliability study, respondents to a Cycles Survey were requested after a week to complete another Cycles Survey — the second, focusing on the prior three weeks' experience. The results the reliability study showed that all but three Cycles items had Pearson Correlations significant at $p < .01$. Of the three non-significant items ($p > .05$) two requested <u>time</u> estimates for noncourse academic work and for play. Two-tailed t-tests examined the data for linear shifts in responses during the retest period. All items showed no

significant differences.

Finally, t-tests were computed to compare respondents of the first survey who completed the retest to those who did not complete the retest. Only two questions showed a significant difference ($p < .01$) in that retest non-respondents were less satisfied with their college experience in general ($t = .049$, $n = 30$, $p < .01$) and more satisfied with the weather and outside environment ($t = .036$, $n = 30$, $p < .01$) (Kegan, 1974b).

In summary, since the Cycles Survey deals with variables with a great potential for change over time, it was necessary to carefully document that the instrument under test-retest situations is highly reliable. Pearson correlations range from .50 to 1.00 with modal correlations in the .60's.

Use of Cycles

The frequency of administration of Cycles depends on the data collection needs. Maintaining periodic data collections over a term establishes a baseline of data from which change can be appropriately observed (Campbell and Stanley, 1963). Change over time due to maturity can be compared with changes in quality of life following a major programmatic event (e.g., budget cuts, coeducation). Since previous Cycles data are available, past data may be reanalyzed with current data to evaluate a new program or educational experiment without the threat to validity of introducing a new measurement procedure.

On a simpler level, the Cycles surveys provide fast data for decision-making about the "state" of the college, planned events, and

students' feelings and behavior. Simple frequencies of events or predictions of contributors to overall satisfaction with college experience are readily provided.

Finally, the greatest potential impact of the Cycles surveys is from their use in developing rational criteria for quality of life evaluations. Criterion-based evaluation, which provides an indication of high or low frequency of response relative to a criterion on a variable is not sufficient for decision-making. Neither is a strict norm-based evaluation. The characteristics of criterion-referenced evaluation better approximate the appropriate technique. However, defining the criteria requires a context from which to examine data. A comparison of results from the quality of life indicators at different institutions provides a framework from which to view data. The purpose here is not to technically norm data but make possible a thoughtful analysis of results, which is not possible when data from the home institution are considered in isolation. The Cycles surveys are currently establishing such a criterion/norm-based context. In addition to the multiple use of Cycles at Hampshire College (where they were originally developed) it has been run at Amherst College and at the University of Massachusetts. At the University, Cycles was run both by phone and by mail. These institutions are quite different in size and type yet, since the purpose is not to norm data but to provide a comparable framework for analysis, the data collected are quite useful. The individual institution's results of Cycles and some comparative analyses results will be presented.

METHOD

Subjects

Subjects for each Cycles survey are randomly selected and sent the survey by mail or called by phone. With mail surveys a follow-up survey is often used to increase the number of respondents. The phone surveys have had no follow-up. Since Cycles attempts to measure periodic change, the subjects are asked to respond to most questions from the framework of "the past two weeks".

Materials

The Cycles surveys are composed of approximately fifty short answer or multiple-choice questions. These items were selected or developed at Hampshire College to meet the following criteria: suitability for use at Hampshire College (an experimental education institution; brevity; reliability and validity. Items with high item/total correlation were selected from multiple item scales or were used as models for developing items.

In general, students are asked their satisfaction with several aspects of their college experience, how they spend their time, and what they have learned recently. There are demographic questions and four open-ended questions, but the majority of the items are responded to by using the Extent scale or the Satisfaction scale.

About twelve questions deal with demographic information, for example, age, sex, residence. Behavioral questions cover the number of

hours spent sleeping per night, doing academic work per day, playing-relaxing per day, meetings with advisor and the number of minutes required to complete the survey. Non-behavioral questions assess satisfaction with college experience, academic progress, residence hall experience, commitment to working group, isolation, enthusiasm and trust.

Depending on the purpose for collecting data, the kinds of analyses vary. Analyses ranged from simple frequency distributions to discriminant analyses. Since the results from several Cycles will be presented in the following section, the analyses will be described with the results.

RESULTS

The purpose of presenting the following results is to initiate the development of a framework from which to examine and interpret the quality of life data obtained from administering Cycles.

Hampshire College Analysis

During the Spring of 1974, five separate random samples of 100 students each were asked to respond to Cycles surveys at Hampshire College. Of particular interest was the analysis of change in variables over the course of the term and analysis of variables associated with key criterion questions. Cycles 1 was sent to 150 students; Cycles 2-5 was sent to 100 students. The response rates were 20%, 30%, 22%, 35% and 61% respectively. Cycles 5 had a follow-up to increase response rate.

Forty-two(42) questions were analyzed for changes during the Spring term. Two-tailed t-tests showed that 17 variables differed significantly ($p < .05$) during a time period.

Insert Table I about here

Some of the changes were to be expected given the related events of the academic calendar. For example, during the fifth Cycles period, students reported meeting more often and for more hours with their advisors; this Cycles period included the official advising session.

As could be expected from acquaintance with New England winters, the fifth Cycles period also saw students more satisfied with the weather and outside environment and more able to participate in and create fun while completing their necessary work.

Spring Recess and warmer weather did not bring significant changes in academic work. Over the course of the term there were no significant reported changes in satisfaction with one's academic progress or in the amount of effort put into course work. After Spring Recess there were no significant reported changes in the amount of effort put into non-course academic work or in the ratio of course to total academic work. However, satisfaction with one's advisor was poorest during the first Cycles period. Furthermore, during the first three Cycles periods when the question was asked, approximately ten, forty, and twenty percent of the responding students were unable to do their usual studying and work because they were sick at least one day. The relation with the ending of winter may also be seen in the responses to the sentence completion question, "About Hampshire, I feel . . .,". Beginning the term with approximately equal numbers of positive and negative comments, the Second period had fewer negative comments, the third period very few positive comments, and the after Spring Recess surveys evidenced an increasingly positive balance.

At the start of the Spring term, students reported involvement in intellectual activities to a great extent, in social and in physical activities to some extent; at the end of the term students reported somewhat less intellectual involvement, somewhat more social involve-

ment, and about the same physical involvement. Between the fourth and fifth Cycles periods students reported more hours spent playing and relaxing; and less isolation during the fifth period. After the first Cycles period students reported being less energetic, enthusiastic, and trusting. And students reported a decreasing sense of influence over the things that heppened to them before Spring Recess; after Recess they regained their initial February sense of control. Finally, while forty to sixty percent of the students reported some change in their important personal relationships during each Cycles period, during the fifth Cycles period more reported good changes and fewer reported bad changes. (Kegan, 1974a)

With regard to criterion questions, regression analyses examined which variables were correlated with the following; satisfaction with a student's Hampshire (College) experience; evaluation of academic contacts with one's advisor; satisfaction with one's advisor; ratio of course/ total of course and non-course academic credit; and satisfaction with one's housing experience. For each of these 5 questions, the regression equations accounted for 100% of the variance of each dependent variable.

Four variables accounted for 62% of the variance in satisfaction with one's Hampshire (College) experience; a greater proportion of one's total academic effort being put into course work (23%), not feeling isolated from most of the people at Hampshire (16%), sleeping more (13%) and being satisfied with one's academic progress (10%). Current house residence, number of terms at Hampshire and sex have no major impact on satisfaction.

Three variables accounted for 71% of the variance in positively evaluating the academic contacts with one's advisor; being less satisfied with one's academic progress (31%), meeting with one's advisor (24%) and having been at Hampshire fewer terms (16%).

Three variables account for 82% of the variance in satisfaction with one's advisor: being less energetic and enthusiastic (50%), having been at Hampshire fewer terms (18%), and meeting with one's advisor (14%).

Two variables account for 67% of the variance in satisfaction with one's House experience: a greater proportion of one's total academic effort being put into course work (45%), and liking the people in one's mod/suite (22%). If the course-academic-ratio variable is excluded from the regression equation a different picture emerges. Four variables account for 63% of the variance: liking the people in one's mod/suite (22%), liking one's self (19%), feeling lonely (12%), and spending fewer hours in one's lounge/living room (10%). (An interpretation of this latter constellation is that the non-gregarious, independent person is more satisfied with Hampshire housing. It appears that Hampshire provides a good setting for independent, intellectual activity, but that a broader range of education experiences are not as supported or satisfying.)

Three variables account for 85% of the variance in the ratio of course to total academic effort: putting less effort into non-course academic work (53%), being in residence at Hampshire fewer terms (22%) and sleeping less per night (10%).

In summary, academic factors seem predominately related to overall

reported satisfaction with the student's Hampshire experience, but social factors--not feeling isolated--also contribute to satisfaction. Advising seems to be more highly evaluated by newer students and by those more needy of advice and counseling--those less satisfied with their academic progress, being less energetic and enthusiastic, meeting more with their advisor, and having been at Hampshire fewer terms. Those putting a larger proportion of their academic effort into course work tend to be newer students and tend to report sleeping less. Finally, reporting a more satisfactory House experience is associated with liking the people in one's mod/suite, with putting a greater proportion of one's total academic effort into course work, and with being non-gregarious and independent. (Kegan, 1974a)

Three-College Analysis

In order to expand the use of results consistently found at Hampshire College, Cycles was also run by mail at Amherst College (response rate 61%, n = 122) and by phone and mail (response rate 37%, n = 147, Arts and Sciences) at the University of Massachusetts in the Spring of 1975 (Hampshire College response rate 55%, n = 109). In 2-tailed t-tests analyzing the responses from mail and phone surveys at UMass, 15 items differed significantly ($p < .05$) between the two groups. The more interesting of these results were, phone respondents were more satisfied with academic progress than mail respondents ($t = 3.97$, $df = 456$, $p < .00$), phone respondents were more satisfied with their UMass experience in general ($t = 2.18$, $df = 456$, $p < .02$) and with

their academic experience ($t = 2.29$, $df = 456$, $p < .02$) than the mail respondents. Mail respondents felt more lonely ($t = 4.0$, $df = 176$, $p < .00$), more isolated ($t = -2.29$, $df = 458$, $p < .02$) and felt that they have less influence over events that happen to them ($t = -2.16$, $df = 456$, $p < .03$) than phone respondents. Finally mail respondents indicated more involvement in intellectual activities ($t = -2.50$, $df = 447$, $p < .01$) and spent more hours per week in academic course work ($t = -2.46$, $df = 442$, $p < .01$) than phone respondents.

Some of these differences can be partially explained by mode of administration, i.e., rapport with phone interviewer, rapidity of interview and by the characteristics of the two samples. Mail respondents are a more volunteer sample in that only volunteers will return the surveys. Response rates for similar phone surveys at UMass are approximately 95%, since fewer than 5% of those contacted refused to respond. Almost twice as many respondents to the mail survey than the phone survey lived off-campus, were transfers or were seniors. These simple demographic differences could account for some of the differences in results.

The majority of the Cycles questions yielded similar answers by mail and by phone survey methods, providing further evidence of the reliability of the instrument under different situations. (Benedict, 1975b)

The results of the mail surveys at Hampshire, Amherst and UMass were investigated using two-tailed t-tests. Table II lists the Cycles variables found common to all three schools and those having signifi-

cant differences ($p < .05$) between schools.

Insert Table II about here

Hampshire differed significantly from Amherst and UMass by reporting more isolation, more good changes in personal relationships, more non-course academic credit, and a higher ratio of non-course to total academic effort. Amherst reported greater satisfaction with Amherst security system, more trust, more commitment to a working group, and more total academic effort. UMass respondents were less satisfied with their advisors, with their academic programs, and their college experience.

Using a discriminant analysis, 12 variables were found to be major predictors of which college a student attended, satisfaction with advisor, ratio of non-course to total academic effort, external locus of control, course academic effort, ability to create fun, non-course academic effort, involvement in physical activities, satisfaction with college experience, satisfaction with house experience, liking mod/suite mates and feeling isolated. The first discriminant function accounted for 71% of the trace, while the second accounted for 29%, (Kegan, 1975b)

Insert Table III about here

Insert Table IIIa about here

A factor analysis was performed on the Spring (1975) Cycles data from Hampshire College. The results showed that the first factor accounted for 16% of the variance and 8 factors were necessary to account for 75% of the variance. The factors are described as; 1) energy and fun; 2) non-course academic effort; 3) intellectual involvement and learning; 4) meetings with advisor; 5) physical environment and learning; 6) house satisfaction; 7) advisor satisfaction; 8) social learning; 9) external locus of control; 10) time spent playing; 11) college satisfaction; 12) general program satisfaction; and 13) personal relationship changes. (Kegan, 1975a)

Finally, a brief comparison was made between the Spring (1975) Cycles data at UMass and the results obtained from running a parallel Cycles at UMass during the Fall of 1975 (Benedict, 1975b). Because of the effects of the economy and budget cuts, several items were hypothesized to have significantly different results. However, only two items showed actual differences. They were; satisfaction with outside environment ($t = 2.18$, $df\ 242$ $p < .03$, $n = 280$), and average number of hours slept during the last two weeks ($t = 3.21$, $df\ 287$, $p < .001$, $n = 28$). It appeared that the detrimental effects of university budget cuts (if any) had not yet strongly affected students.

SUMMARY AND CONCLUSIONS

There have been several reasons for collecting and analyzing Cycles data in the variety of ways described. On one level, Cycles data provides quality of life indications for the time at which it is administered. Hampshire College Cycles have established a longitudinal data base for viewing change over time and for measuring relative effects of events on campus. At Amherst College, the data from Cycles (Spring 1975) were used as a baseline from which to evaluate the Fall 1975 instruction of coeducation.

At UMass, where Cycles has continued to be administered, a database is being established. In addition, departments or agencies dealing with a particular subgroup of the student population are comparing results of the subgroup to the total. Cycles is also used to supplement and verify results of the weekly campus telephone surveys, each of which focuses on one campus issue. Probably, the biggest use of the Cycles data at the university has been to highlight areas for further investigation. In particular, based on Cycles Spring 1975 and similar Fall 1975 results, UMass has been following up the issue of student dissatisfaction of advisors.

As mentioned earlier, administering Cycles at several schools had as one purpose, the beginning of a framework from which to view data from one school. While it is still in the initial stages, UMass was able to make use of the framework with regard to the question of "satisfaction with advisor". While the level of satisfaction with advisor

reported may have appeared low to UMass examiners of data, the perspective of the results from Hampshire and Amherst Colleges was of substantial benefit. This is not to say that the framework will provide an ultimate cutting score for acceptability/non-acceptability of results, but it does give the researcher a comparative sense both of how high, low or average the results are, and of what may be realistic goals.

Studies at Hampshire over the past 2 1/2 years have indicated that students' satisfaction with their academic progress and feelings of isolation were significantly related to students' satisfaction with their college experience. In view of the importance of the feelings of isolation, these three-college data indicating high Hampshire reported isolation.

Some of the contributions of the Amherst College data to the framework raise interesting points for further discussion. Amherst students report having greater commitment to a working group. Some educational research implies that such a commitment is conducive to greater learning (Birney, Grose, Coplin, 1959). Amherst's greater satisfaction with security raises some tri-college questions. How do objective measures of security problems compare across the three colleges, and if objective measures support Amherst's better security, what factors contribute to their better security program? Finally, is the higher trust of Amherst students due to better security or to other factors?

The continued three-college use of the Cycles instruments will

strengthen the data-base each school has established and allow each school to evaluate ongoing programs. Furthermore, each school will be able to compare its results with those produced by the other schools and eventually establish a criterion against which each can judge the success of its efforts toward educating students. These criteria will not be norms, nor will they be arbitrary, indefensible cutting point for judging survey results. Cycles has been shown to be a reliable and practical method for collecting multi-dimensional data on students' "quality of life". Its usefulness is largely limited or enhanced by the imagination of its researchers.

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APPENDIX

CYCLES SURVEY

TABLES

Hampshire Cycles Survey

HAMPSHIRE COLLEGE

Office of Institutional Research and Evaluation

Hello! We're trying to learn more about what living at Hampshire is like: what types of changes occur during the course of a year. We need your help in answering these questions which focus on your experience DURING THE PAST TWO WEEKS. Please complete this Cycles Survey today, and return it to IRE, Prescott House, via college mail. Leave blank inapplicable questions; feel free to add marginal comments.

___ 1. How many times have you met with your advisor in the past two weeks (write number).
___ 2. How many total hours have you met with your advisor in the past two weeks.
___ 3. How would you rate your contacts with your advisor: 1) poor; 2) fair; 3) good; 4) very good; 5) excellent.
___ 4. How satisfied have you been with your advisor: 1) very dissatisfied; 2) dissatisfied; 3) satisfied; 4) very satisfied.
___ 5. How satisfied are you with your academic progress the past two weeks (use codes from Question 4).
___ 6. During the past two weeks, how satisfied have you been with your Hampshire experience (use the codes from Question 4).
___ 7. How satisfied have you been with your House experience (use codes from Question 4).

For questions 8 - 26 use this EXTENT SCALE: 1) to a very little extent; 2) to a little extent; 3) to some extent; 4) to a great extent; 5) to a very great extent.

___ 8. I have been satisfied with the help provided by my House staff (use EXTENT SCALE).
___ 9. I feel I have little influence over the things that happen to me.
___10. I have been satisfied with the weather and outside environment the past two weeks.
___11. I like myself.
___12. During the past two weeks, I have been able to participate in and create fun while completing my necessary work.
___13. I have usually been energetic and enthusiastic.
___14. I have been trusting of people, I have not been cautious or guarded.
___15. I have felt lonely during the past two weeks.
___16. I have felt isolated from most of the people at Hampshire.
___17. I am satisfied with Hampshire's security program.
___18. I have liked the people I live with (my mod/suite) the past two weeks.
___19. I have a commitment to a working group--eg. Hampshire Graphics, theater, Climax, peer counseling. What group:

xx. During the past two weeks, to what extent have you been involved in the following activities:

___20. Intellectual ___21. Social ___22. Physical

During the past two weeks, to what extent have you learned in each of these three areas. Also give specific examples of your learnings:

___23. Intellectual ___24. Social ___25. Physical

___26. To what extent are you satisfied with your average Hampshire course (neither your best nor worse course).

___27. During the past two weeks, have you experienced any changes in your important personal relationships: 1) very bad; 2) bad; 3) no change; 4) good; 5) very good.

___28. During the past two weeks, approximately how many days have you been unable to do your usual studying and work because you were sick.

___29. On the average, how many hours have you slept per night (write number).

__30. In the past two weeks, how much effort have you put into your non-course academic work (independent study, house course, etc.) in hours/week.

__31. During the past two weeks, how much effort have you put into your courses in hours per week (include class time).

__32. How many hours have you been in your lounge/living room per week.

__33. During the past two weeks, how many hours per week have you spent playing, relaxing.

___34. Current residence: 1) Merrill; 2) Dakin; 3) Greenwich; 4) Enfield; 5) Prescott; 6) off-campus.

__35. Year you arrived at Hampshire: 19 7 _.

___36. Term you first arrived at Hampshire: 1) January; 2) Spring; 3) Fall.

__37. Number of semesters in residence at Hampshire (not on leave).

__38. Primarily associated School: 1) none; 2) HA; 3) LC; 4) NS; 5) SS; 6) two or more Schools, list:

___39. Number of semesters at another college before coming to Hampshire (transfer students write number; non-transfers write zero).

___40. What is your degree of financial aid: 1) none; 2) some; 3) full.

___41. How many Divisional exams have you successfully completed.

___42. Divisional contract filed: 1) in Div I; 2) Div II filed; 3) Div III filed; 4) Div III completed.

__43. Your age.

___44. Your sex: 1) male; 2) female.

___45. Are you a member of the Third World: 1) no; 2) yes.

46. About Hampshire, I feel _____

_____

_____.

47. Has anything happened to you personally during the past two weeks that's been good/bad? (clearly indicate which)

48. Have you done anything during the past two weeks that you especially like or dislike? (clearly indicate which)

49. Were there any critical incidents that have happened during the past two weeks--things that may have affected your answers to these questions or were otherwise important to you?

__50. Approximate number of minutes you took to complete this survey.

HAMPSHIRE COLLEGE

Table 1 - Changes over Spring Term

Item	C1 - C2 t	C1 - C2 df	C1 - C2 p	C2 - C3 t	C2 - C3 df	C2 - C3 p	C3 - C4 t	C3 - C4 df	C3 - C4 p	Item
Q01	-.96	55.63	.342	1.00	48.75	.321	.14	39.74	.886	Q01
Q02	-.68	56.97	.501	-1.34	24.74	.192	1.52	24.63	.142	Q02
Q03	-2.10	55.00	.040	.29	42.47	.770	.74	43.82	.464	Q03
Q04	-2.12	53.41	.038	.32	35.31	.749	.47	43.83	.644	Q04
Q05	.62	53.21	.538	-1.22	47.85	.230	.23	44.33	.819	Q05
Q06	-.38	55.80	.702	.89	39.72	.377	-1.02	33.71	.317	Q06
Q07	-.20	52.54	.844	-.70	44.77	.487	.46	49.94	.650	Q07
Q08	.55	36.88	.582	.64	33.77	.528	-.73	33.96	.473	Q08
Q09	-2.06	44.89	.046	-1.49	37.07	.145	3.08	34.08	.004	Q09
Q10	-.10	53.18	.922	-.33	38.58	.742	-.61	35.33	.545	Q10
Q11	.68	51.68	.496	-.29	39.04	.770	-.39	29.91	.700	Q11
Q12	.23	51.81	.819	.72	28.88	.477	-.60	27.73	.552	Q12
Q13	1.13	55.00	.265	.70	43.23	.487	.60	49.05	.553	Q13
Q14	2.00	53.18	.050	-.23	43.03	.822	.10	42.30	.924	Q14
Q15	2.88	42.10	.006	.10	42.14	.918	-.37	41.40	.715	Q15
Q16	-1.55	47.08	.127	1.94	43.76	.059	-1.40	43.45	.167	Q16
Q17	-.49	52.52	.623	-1.17	42.51	.247	.91	41.48	.370	Q17
Q18	.06	54.95	.956	-.40	45.48	.691	.40	49.27	.693	Q18
Q19	.59	38.87	.557	-.28	23.24	.783	-.83	21.23	.415	Q19
Q20	-.63	45.84	.530	.11	44.98	.912	.28	47.89	.784	Q20
Q21	.02	52.20	.981	-.29	44.70	.773	1.04	38.25	.307	Q21
Q22	1.51	53.84	.138	-1.16	38.97	.254	2.29	42.81	.027	Q22
Q27	.81	43.66	.425	1.21	42.36	.235	-.81	44.60	.422	Q27
Q41	.42	56.68	.675	-.86	33.57	.395	1.11	33.24	.275	Q41
Q42	0	0	.500	0	0	.500	-4.81	22.00	.000	Q42
Q43	.41	54.39	.685	-.17	38.43	.864	-1.09	49.37	.282	Q43
Q44	-.98	52.47	.334	.01	38.31	.991	-.27	40.72	.787	Q44
Q45	.58	38.82	.566	1.61	40.93	.116	-.34	38.09	.735	Q45
Q46	-1.16	27.89	.255	1.29	29.95	.207	.27	32.83	.781	Q46
Q47	-.01	58.18	.988	.07	46.11	.941	.47	49.85	.642	Q47
Q48	1.35	55.41	.183	-.46	3.03	.650	.01	48.40	.992	Q48
Q49	0	0	.500	0	0	.500	-9.71	33.00	.000	Q49
Q50	.17	58.72	.865	-1.12	47.34	.270	.54	47.41	.594	Q50
Q51	-.99	50.32	.326	.13	48.55	.899	-.25	45.66	.805	Q51
Q52	.94	52.95	.353	.45	43.72	.653	-.28	47.37	.783	Q52
Q53	-1.62	58.07	.11	.60	44.07	.549	-.58	44.15	.568	Q53
Q54	-1.45	56.86	.152	.54	48.60	.593	-.49	43.83	.627	Q54
Q55	-.88	58.88	.381	-.08	45.30	.933	.75	44.62	.457	Q55
Q56	0	58.00	1.000	1.00	29.00	.326	0	0	.500	Q56
Q57	-.59	37.57	.557	.08	39.60	.940	.67	44.62	.504	Q57
Q58	-1.51	55.56	.137	.03	44.99	.975	-.24	41.92	.813	Q58
Q61	.41	54.39	.685	-.17	38.43	.864	-2.85	50.00	.006	Q61
Q62	0	0	.500	0	0	.500	5.27	29.00	.000	Q62

Table 1 - Changes over Spring Term

Item	C4 - C5 t	C4 - C5 df	C4 - C5 p	C1 - C5 t	C1 - C5 df	C1 - C5 p	C5 - (C1-C4) t	C5 - (C1-C4) df	C5 - (C1-C4) p	(C4,C5) - (C1-C3) t	(C4,C5) - (C1-C3) df	(C4,C5) - (C1-C3) p	Item
Q01	-2.77	93.71	.007	-2.28	83.70	.025	2.61	90.81	.011	1.43	176.34	.154	Q01
Q02	12.29	91.62	.025	-2.63	89.61	.010	1.71	118.98	.090	.48	161.14	.631	Q02
Q03	-1.13	62.57	.265	-2.23	56.38	.030	1.26	122.83	.211	.63	164.85	.532	Q03
Q04	-.19	58.56	.848	-1.45	53.23	.154	.24	129.34	.812	.12	167.01	.901	Q04
Q05	.26	63.36	.795	-.43	60.52	.670	.32	132.15	.749	.74	165.15	.461	Q05
Q06	-.69	74.98	.495	-1.10	56.35	.277	1.44	122.27	.152	1.43	156.32	.155	Q06
Q07	-.23	50.42	.617	-.77	50.33	.448	.50	127.55	.618	.43	158.68	.667	Q07
Q08	-.47	53.49	.642	.21	53.05	.836	.63	110.38	.532	.43	133.34	.670	Q08
Q09	-.46	58.77	.648	-.96	61.59	.343	-.95	133.49	.346	-1.86	145.16	.065	Q09
Q10	-1.35	54.73	.184	-2.82	54.70	.007	3.18	133.21	.002	3.01	152.63	.003	Q10
Q11	-1.01	76.50	.317	-1.02	59.36	.310	1.73	117.31	.086	1.54	148.92	.125	Q11
Q12	.05	57.07	.957	.60	56.67	.548	-.08	133.12	.937	-.05	144.59	.958	Q12
Q13	-2.08	71.38	.041	.42	70.27	.677	1.25	99.58	.214	-.40	165.96	.691	Q13
Q14	-.80	65.24	.427	1.44	59.80	.154	.32	124.06	.752	-.43	162.85	.670	Q14
Q15	-1.71	58.16	.093	1.49	68.69	.142	1.53	128.79	.127	.32	156.18	.749	Q15
Q16	1.38	57.79	.173	.24	52.16	.812	-1.32	135.99	.190	-.45	147.96	.653	Q16
Q17	2.11	67.24	.038	.86	54.70	.392	-2.44	116.65	.016	-1.43	156.65	.154	Q17
Q18	.76	64.85	.452	.81	61.45	.420	-1.18	100.87	.240	-.97	163.89	.335	Q18
Q19	1.73	48.85	.090	.73	39.30	.472	-1.10	85.28	.274	.24	110.08	.811	Q19
Q20	1.61	65.24	.112	1.74	71.71	.086	-2.45	107.57	.016	-1.92	169.56	.057	Q20
Q21	-2.89	77.04	.005	-1.71	63.86	.092	2.59	112.58	.011	1.04	165.12	.301	Q21
Q22	-3.66	63.43	.001	-.41	57.30	.686	2.45	123.03	.016	-.32	166.85	.749	Q22
Q27	.02	61.80	.981	1.59	79.43	.116	-.42	104.72	.676	-.62	161.99	.536	Q27
Q41	-2.14	59.07	.036	-1.08	49.63	.285	1.98	128.37	.050	.62	157.54	.537	Q41
Q42	-1.14	76.58	.256	-6.72	40.00	.000	1.14	76.58	.256	8.24	63.00	.000	Q42
Q43	1.11	67.32	.269	.16	78.99	.877	-.45	79.52	.657	.76	139.40	.448	Q43
Q44	.45	81.49	.653	-.87	57.87	.385	.12	103.66	.902	.67	172.67	.503	Q44
Q45	-.52	48.72	.603	1.08	37.82	.288	-.23	80.32	.820	-.86	131.92	.389	Q45
Q46	-2.24	76.98	.028	-1.69	70.22	.096	1.65	80.57	.103	.46	133.60	.646	Q46
Q47	.07	68.09	.942	.76	72.49	.448	-.70	105.90	.482	-1.01	173.55	.312	Q47
Q48	-.71	61.67	.483	.28	65.78	.779	.86	123.00	.390	.44	172.30	.660	Q48
Q49	.54	53.08	.592	-16.55	56.00	.000	-.54	53.08	.592	18.44	90.00	.000	Q49
Q50	-.29	61.73	.771	-.85	55.86	.398	.73	125.97	.467	.72	168.68	.474	Q50
Q51	-.35	83.24	.726	-1.71	86.92	.091	.95	99.01	.342	1.16	176.73	.249	Q51
Q52	-.08	68.01	.939	1.07	50.61	.291	-.39	114.60	.700	-.66	166.61	.512	Q52
Q53	.89	67.64	.377	-.95	64.21	.346	-.40	124.02	.692	.42	173.77	.675	Q53
Q54	-.05	68.78	.960	-1.76	59.85	.084	.80	123.65	.426	1.11	166.58	.270	Q54
Q55	-1.73	67.11	.088	-1.89	59.60	.064	1.89	119.41	.061	.86	171.44	.390	Q55
Q56	-2.05	58.00	.045	-.73	76.83	.465	1.41	75.21	.162	.68	165.78	.497	Q56
Q57	10.29	33.00	.000	9.79	27.30	.000	-18.14	105.00	.000	-.60	69.46	.551	Q57
Q58	.90	81.81	.373	-1.14	52.03	.260	-.18	118.43	.858	.64	168.16	.525	Q58
Q61	.30	69.54	.762	13.11	77.60	.003	2.31	78.03	.023	4.62	129.07	.000	Q61
Q62	1.44	64.93	.155	8.63	51.00	.000	-6.28	70.95	.000	-10.03	81.00	.000	Q62

TABLE I

TABLE II: SIGNIFICANT DIFFERENCES BETWEEN SCHOOLS.

	HAMPSHIRE			AMHERST			UMASS-CAS			HC-AC		HC-UMASS		AC-UMASS	
	n	x	SD	n	x	SD	n	x	SD	t	p	t	p	t	p
1 times met with advisor	109	1.1	1.22	122	1.3	1.07				-1.55	.12				
2 hours met with advisor	109	1.0	1.20	122	1.1	1.02				-.44	.66				
3 rated contacts w/ advisor	106	3.2	1.22	122	3.1	1.27				.79	.43				
4 satisfied w/ advisor	105	3.2	0.76	121	3.1	0.76	117	2.3	0.97	.53	.60	7.48	.00	7.22	.00
5 satisfied w/ academic progress	109	2.9	0.79	120	2.9	0.70	146	2.6	0.89	-.26	.79	3.20	.00	3.80	.00
6 satisfied w/ Hamp. experience	108	3.0	0.72	119	2.9	0.81	146	2.6	0.84	.54	.59	3.52	.00	2.86	.01
7 satisfied w/ house experience	99	2.9	0.89	122	3.0	0.82	140	2.7	1.01	-.73	.46	1.64	.10	2.55	.01
8 satisfied w/ house staff help	90	2.8	1.06	122	3.3	0.77				-3.94	.00				
9 external locus of control	104	2.1	1.14	116	2.3	1.15	145	2.8	1.21	-1.39	.17	-4.64	.00	-3.28	.00
10 satisfied with weather	105	3.5	1.03	119	4.2	0.90	144	3.5	1.12	-5.02	.00	.06	.95	5.30	.00
11 like self	105	3.9	0.78	119	4.1	0.73	143	3.8	0.86	-1.61	.11	1.27	.21	3.03	.00
12 able participate, create fun	107	3.2	1.07	122	3.4	1.13	145	2.9	1.13	-1.48	.14	1.83	.07	3.38	.00
13 been energetic, enthusiastic	107	3.4	0.93	122	3.5	0.99	146	3.2	1.01	-1.17	.24	1.64	.10	2.86	.01
14 been trusting	106	3.2	0.95	119	3.5	0.83	144	3.3	1.09	-3.16	.00	-.80	.42	2.31	.02
15 felt lonely	106	2.5	1.18	122	2.4	1.01	145	2.6	1.24	.20	.84	-.88	.38	-1.19	.23
16 felt isolated	106	2.8	1.23	121	2.5	1.22	146	2.4	1.26	1.99	.05	2.54	.01	.51	.61
17 satisfied w/ security	87	3.1	1.11	102	3.4	1.16	140	2.7	1.13	-2.06	.04	2.57	.01	4.91	.00
18 liked mod/suite mates	99	3.7	1.10	117	3.7	0.91	142	3.8	1.13	.11	.92	-.61	.54	-.82	.42
19 commitment to working group	78	2.8	1.56	90	3.3	1.52	123	2.5	1.66	-2.05	.04	1.28	.20	3.58	.00
20 intellect'l activity involv.	106	3.8	0.84	121	3.9	0.95	145	3.7	1.09	-.78	.43	1.42	.15	2.12	.04
21 social activity involvement	106	3.2	1.02	120	3.3	0.95	144	3.0	1.09	-.50	.62	.91	.36	1.50	.13
22 physical activity involvement	105	2.6	1.11	121	2.7	1.13	144	3.0	1.14	-.79	.43	-2.95	.00	-2.20	.03
23 intellectual learning	102	3.6	0.98	118	3.7	1.02	139	3.3	1.11	-.40	.69	2.08	.04	2.52	.01
24 social learning	95	3.2	1.24	115	3.0	1.29	135	2.9	1.19	.71	.48	1.89	.06	1.17	.24
25 physical learning	95	2.3	1.14	112	2.2	1.21	136	2.5	1.21	.87	.38	-1.22	.22	-2.16	.03
26 satisfied w/ avg Hamp course	102	3.1	0.86	119	3.2	0.77	143	3.0	0.96	-.62	.53	1.10	.27	1.85	.07
27 changes, pers. relationships	100	3.6	1.06	121	3.2	0.85	142	3.1	0.67	2.89	.00	3.44	.00	.36	.72
28 days sick	108	0.9	1.72	122	0.4	0.78	145	1.0	1.95	2.88	.01	-.68	.50	-3.83	.00
29 hours slept per night	109	7.1	1.65	122	7.0	1.36	144	7.3	0.83	.30	.76	-.85	.40	-1.47	.14
30 non-course acad. effort hrs/wk	95	17.2	22.73	118	6.9	8.61	142	5.4	8.12	4.18	.00	4.86	.00	1.46	.15
31 course academic effort hrs/wk	93	28.0	18.14	119	43.21	20.03	142	33.5	20.25	-5.74	.00	-2.15	.03	3.85	.00
32 hrs/wk in lounge/living room	90	8.6	12.59				140	11.1	16.94			-2.15	.03		
33 playing/relaxing, hrs/wk	94	25.9	21.13	118	26.8	17.95	137	25.5	22.42	-.34	.74	.13	.89	.52	.60
35 entering class	109	73.1	1.28	122	71.7	6.95	146	72.5	1.15	2.34	.02	4.59	.00	-1.24	.22
37 semesters in Hamp. residence	108	3.7	2.07	121	4.6	2.14				-3.20	.00				
39 semesters at previous coll.	108	0.5	1.23	121	0.2	0.74	146	0.3	0.44	2.51	.01	1.87	.06	-1.43	.15
40 degree of financial aid	105	1.2	0.51	120	1.4	0.73				-1.98	.05				
43 age	107	20.1	2.86	122	20.0	1.70	147	21.1	2.12	.50	.62	-2.83	.00	-4.72	.00
44 sex	109	1.5	0.50	120	1.0	0.09	146	1.5	0.52	10.75	.00	.82	.413	-10.85	.00
45 third world member	106	1.1	0.80	118	1.1	0.24	143	1.0	0.20	.78	.44	1.01	.31	.63	.53
46 minutes to complete survey	101	15.0	9.89	118	19.7	11.27	144	14.6	4.82	-3.25	.00	.43	.67	4.58	.00
47 total academic effort	100	42.5	23.51	119	50.0	20.61	146	37.8	22.11	-2.51	.01	1.55	.12	4.63	.00
48 ratio noncourse:total acad.	100	35.3	32.84	119	14.4	14.41	146	16.5	23.73	5.92	.00	4.92	.00	-.89	.37

TABLE III: NONDEMOGRAPHIC DISCRIMINANT ANALYSIS

	WILKS LAMBDA	SIG CHANGE RAO'S V	STANDARDIZED COEFFICIENTS FUNCTION 1	STANDARDIZED COEFFICIENTS FUNCTION 2
V04 satisfied with advisor	0.745	0.000	0.899	-0.069
V48 ratio noncourse:total acad effort	0.669	0.000	0.036	0.158
V09 external locus of control	0.628	0.000	-0.409	-0.203
V31 course academic effort hrs/wk	0.599	0.000	0.127	-0.622
V12 able participate, create fun	0.582	0.001	0.197	-0.207
V30 non-course acad. effort hrs/wk	0.569	0.004	0.269	0.330
V22 physical activity involvement	0.557	0.004	-0.256	-0.113
V07 satisfied with house experience	0.544	0.001	0.353	-0.233
V18 liked mod/suite mates	0.523	0.000	-0.317	0.246
V16 felt isolated	0.515	0.014	0.252	0.038
V06 satisfied with college experience	0.508	0.032	0.154	0.148
V17 satisfied with security	0.502	0.061	0.114	-0.172
V11 like self	0.497	0.095	0.049	-0.203
V19 commitment to working group	0.493	0.177	0.055	-0.216
V27 changes, personal relationships	0.489	0.145	-0.121	0.271
V20 intellectual activity involvement	0.486	0.180	-0.162	0.089
V29 hours slept per night	0.483	0.226	-0.112	0.102
V14 been trusing	0.481	0.296	-0.086	-0.130
V21 social activity involvement	0.478	0.294	0.103	0.022
V25 physical learning	0.478	0.569	0.026	0.179
V24 social learning	0.477	0.564	0.029	-0.127
V15 felt lonely	0.476	0.638	-0.050	0.081
V26 satisfied with average college course	0.475	0.714	o.006	0.096
V23 intellectual learning	0.475	0.822	0.042	-0.067
V05 satisfied with academic progress	0.475	0.953	0.014	0.032

TABLE IIIa: DISCRIMINANT PREDICTION RESULTS

	n	PREDICTED GROUP MEMBERSHIP HC	AC	UMASS	CORRECT PREDICTION
NONDEMOGRAPHIC QUESTIONS					
HC	103	64	21	18	62%
AC	117	23	77	17	66%
UM	139	15	20	104	75%
		x^2=196.9 p<0.000			68%
DEMOGRAPHIC QUESTIONS					
HC	103	43	37	23	42%
AC	117	29	72	16	62%
UM	139	38	43	58	42%
		x^2=35.7 p<0.000			
BOTH SETS OF QUESTIONS					
HC	103	70	21	12	68%
AC	117	18	87	12	74%
UM	139	11	18	110	79%
		x^2= 272.1 p<0.000			74%

Developing and Using Quality of Life Indicators--The Cycles Survey

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The problems of developing a low cost, quality institutional research program capable of longitudinal research, continuous broad bandwidth monitoring and data comparisons with other institutions, led to the development of the Cycles Survey as an initial set of student quality of life indicators. Cycles is a multidimensional survey instrument with behavioral and non-behavioral questions. Test-retest reliabilities range from 0.50 to 1.00. Cycles has been used to investigate short-term changes in key monitoring variables over the course of a term, to measure annual changes in quality of life for all students and for specific subgroupings such as freshmen or women. In addition to establishing data baselines, Cycles can be used to link norm-referenced and criterion-based evaluations.

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